

Investment Opportunities in Taiwan's Passive Component Industry

I. Top Reasons to Invest in Passive Component Industry in Taiwan

1. Intense cluster effect-more than 55 passive component manufacturers are located in Taiwan.
2. Top importing nation of passive components for Mainland China.
3. Number two gross industrial production of passive components in the world.
4. Preferred HQ location choice for OEM of electronic systems in the world.
5. Renowned global laptop and mobile phone brands are from Taiwan.
6. The world-famous Hsinchu Science Park is located in Taiwan.
7. The most complete upstream and downstream industrial chains of passive components in the world.

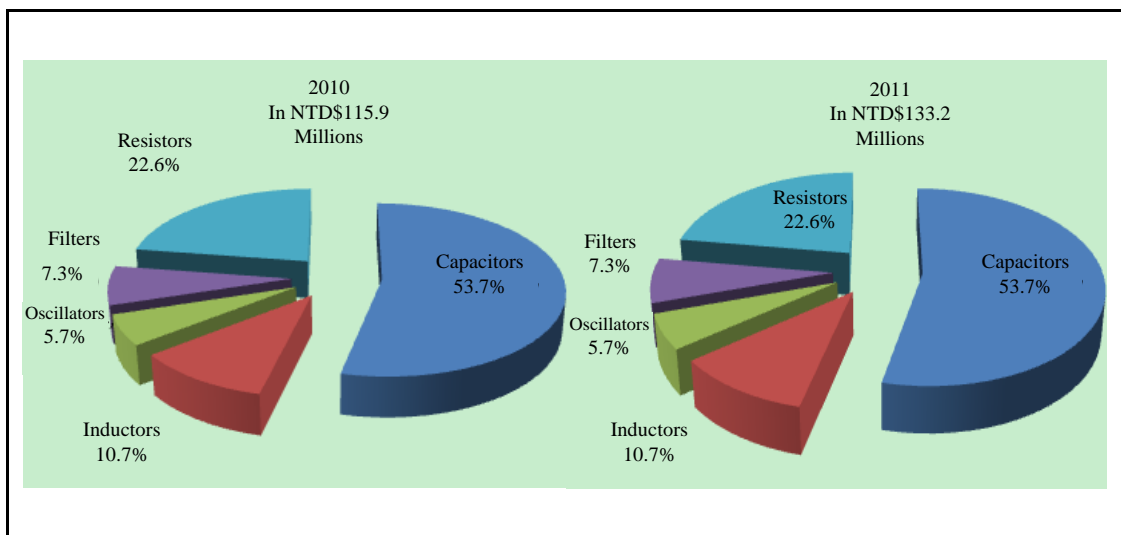
II. Growing Industrial Size of Passive Component Industry in Taiwan

Benefiting from the trend of functional enhancement of consumer electronics devices and replacement rush of analog TVs to digital TVs in 2010, the passive component industry in Taiwan has seen unprecedented demand growth. Additionally, the introduction of a new breed of smart phones and tablet PCs and rapid economic development in emerging markets such as China are all reasons driving demand growth for passive components.

III. Complete Product Line Offered in the Passive Component Industry in Taiwan

Analyzing from product market distribution, capacitors have the largest

market share, among other passive components, as shown in Figure 2, and this product alone accounts for about one half of the overall industrial production in the passive component market. The capacitor category primarily consists of FPCON, electrolytic capacitor and MLCC. The following capacitors are inductors and resistors, which are followed by oscillators and filters. Currently, Taiwan has nearly 80% market share of chip resistors, or the highest market share in the world; as for inductors, since they are mostly customized based on customer requirements, it takes longer for them to get certified. Thus, the barriers to entry for inductors are quite high compared to others, and most suppliers in Taiwan do not focus much on this product. Chilisin Electronics Corp is the largest inductor manufacturer in Taiwan, and they have the most advanced customization capacity and most complete inductor product lines. Among all passive components, capacitors have the highest market share. Although there are shortages for both MLCCs and electrolytic capacitors and they both have the highest growth among other passive components, their worldwide supply among all Taiwan manufacturers is still lower than 20%. Therefore, the capacitor market will be what Taiwan manufacturers aggressively focus their development effort on.



Source: IEK (2011/04)

Figure 2 Product Distribution of the Passive Component Industry in Taiwan

IV. There is a High Number of Passive Component Suppliers in Taiwan

Table 1 Operational Status of Major Manufacturers of Passive Components in Taiwan

	2013		2012	
	Operating Revenue (NT\$ million)	Net Profit Margin (%)	Operating Revenue (NT\$ million)	Net Profit Margin (%)
Yageo	24,735	5.95	11,529	9.18
Walsin	13,056	-3.73	5,654	-24.81
Holy Stone	15,899	3.95	12,454	5.26
Lelon	5,711	7.27	3,824	3.32
Chinsan	3,012	17.88	1,639	30.82
TA-I	3,829	2.22	2,085	5.01
Chilisi	3,705	7.00	2,387	11.13
Thinking	4,270	11.33	2,552	16.88
RALEC	2,926	9.44	1,284	12.74
Bothhand	2,259	2.40	2,000	6.48
Prosperity Dielectrics	2,132	0.95	1,825	-2.64
TXC	9,504	9.84	9,477	12.12
Jamicon	1,927	5.12	1,103	-4.49
INPAQ	2,805	1.73	1,579	-9.10

Source: Market Observation Post System

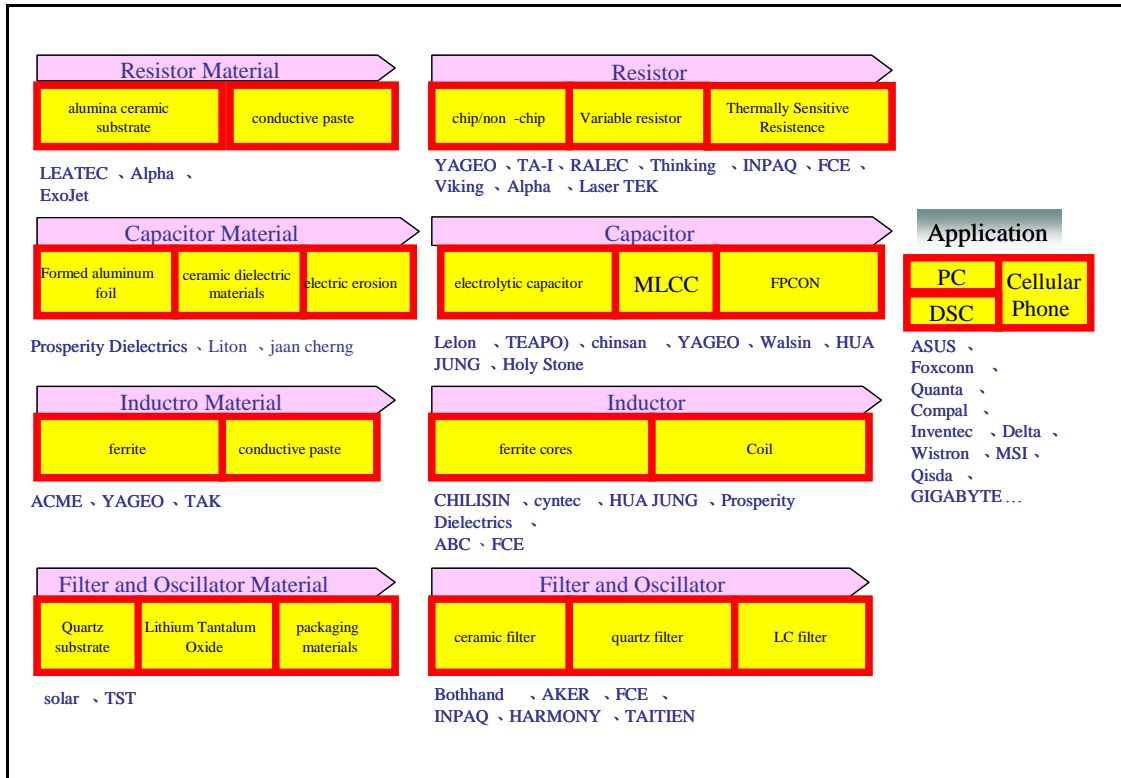
V. Carefully Conceived Development Strategy Deployed by Passive Component Manufacturers in Taiwan

Beside consumer electronics that are perceived to offer high growth potential, manufacturers of passive components also continuously expand product applications. As the scope and range of in-vehicle electronics systems and LED illumination products are still expanding, manufacturers also focus on development of their products in these two fields. In terms of in-vehicle applications, Yageo has successfully developed car use thick film lead free chip resistors and MLCC, and Walsin has succeeded introducing their products to the European automobile market; as for LED illumination applications, Holy Stone also started mass manufacturing ceramic substrates in Q3, 2010 and TA-I and Polytronics have also deployed their RD effort in this field.

Most passive component manufacturers also seek to transform their existing product lines from low gross profit margin and profit contributing products to high gross profit margin and profit contributing ones and add high voltages and mid-to high end products. For example, Lelon transform their existing product from low gross profit margin and profit contributing products to high gross profit margin and shift their attention instead to such fields as automobile, industrial, and energy conservations. Chinsan decided to forgo the orders of low voltage and low gross profit products as approved in the appliance subsidy program in rural areas, start deployment for FPCON and mid to high voltage products, and focus on orders from known international brands. Additionally, since China is far ahead of other countries in economic recovery, deployment in the Great China Area is also one of the major strategic focuses. Walsin and PSA Prosperity Dielectrics also signed memorandum of investment and production collaboration projects with the Chongqing City Government.

VI. Complete Supply Chain and Geographic Proximity to World Factory

As shown in Figure 3, the upstream industry of the passive component industry is raw material suppliers and the downstream is terminal application product manufacturers, which are mostly in the fields of 3C applications (about 70% of them). Currently, although most upstream materials and high-end materials are still supplied by Japanese manufacturers, domestic suppliers are now capable of and start to provide critical components. For downstream products including motherboards, power supplies, laptops, mobile phones and wireless communications equipment, their manufacturers are mostly located in Taiwan. Thus, the integration between downstream and upstream of the passive component supply chains is complete.



Source: IEK

Figure 3 Industrial Chain of Passive Components in Taiwan

Table 3 Exporting Countries of Passive Components for Taiwan

Rank	2011			2010		
	Country	Value (NT\$:million)	Ratio	Country	Value (NT\$:million)	Ratio
1	China	18,973	41.06%	China	18,646	38.09%
2	Hong Kong	13,799	29.82%	Hong Kong	15,574	31.74%
3	USA	2,832	6.12%	USA	3,351	6.83%
4	Germany	1,860	4.02%	Germany	1,889	3.85%
5	South Korea	1,841	3.98%	South Korea	1,791	3.65%

Data Source: Importing and Exporting Database, Custom Affairs, Taiwan

As shown in Table 3, Mainland China, the world factory of consumer electronics products in the in, has a high demand for passive components but is short of qualified suppliers of passive components. Thus, most passive component suppliers in Taiwan set their production facilities in China to supply locally. As of now, mainland China is the largest exporting country of passive components for Taiwan. As cross strait relations become more stable and

peaceful in the future, if beneficial tariff terms are available, then the China market will be a big plus for the growth of the passive component industry in Taiwan.

VII. Full of Growing Potential For the Future

As the recovery of the world economy is underway, the demand in the terminal product market is on the rise. Except for emerging markets such as mainland China that are showing strong demand in the market, demand in developing markets such as the US and Western Europe markets are also getting back on track, which ultimately stimulates the purchasing needs of consumer electronics; among all consumer electronics products, the demand for new product applications from smart phones, to tablet PCs, LCD TVs, LED or LCD TVs and 3D TVs will encourage the demand for passive components. As well, some promising and emerging applications such as LED illuminations, smart TV, E-reader, the internet of things, new energy, medical electronics will also raise the current demand for passive components and become their new growth drivers. In general, all these trends are expected to increase the aggregated shipments and revenues for the passive component industry.